is used only because it is handy. Colloid solution is much better, but best of all is a transfusion.

It is not assumed, however, that every case of low blood pressure necessarily needs artificial restitution. In some instances moderately lowered pressure is either not dangerous, or is beneficial in stopping hemorrhage. The condition of cerebral circulation should dictate whether or not we use restorative measures. Whether a person or a dog is bled into his splanchnic veins or bled into a vessel, the effect is just the same; the condition is shock.

When the pulse of a patient is felt to respond to any hypodermic injection in a minute and a half, we must conclude that the person who holds the pulse has a lively imagination.

Transfusion can hardly be classified as an operation of much gravity, nor one likely to increase shock. The difficulties and inconveniences are trivial. However, whether or not a surgeon resorts to transfusion is largely a matter of temperament. Patients who die suddenly in the early stages of anesthesia usually die from acapnea—excessive breathing, in other words. Irregularity of respiration post-operatively, with pronounced fluctuations, in my experience is generally found in patients who have not suffered from shock, but who have post-operative hysteria. This diagnosis, however, would hardly be made in the presence of morphine poisoning.

This whole paper and these charts will not convince any of you by themselves. The only thing that brings conviction is to have our patients die under our unavailing efforts, frantic stimulation, and ill-judged measures. Then we turn to experimental methods and find the cause, the reason and the remedy.

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## TRAUMATIC RETROPERITONEAL DISPLACEMENT OF THE DUODENUM; ABSOLUTE OBSTRUCTION DEVELOPING GRADUALLY THEREFROM; GASTRO-JEJUNOSTOMY; DUODENUM-JEJUNOSTOMY; RECOVERY.*

By LEWIS W. ALLEN, M. D., San Francisco.

There are two points in the history of this case which have led me to report it before the Society. It is not because of the character of the lesion, for it is so unusual that it is not likely to occur a second time.

In the first place I would draw your attention to the symptoms beginning three to four weeks after the accident, and to their very gradual development. They led to an incorrect interpretation of the X-ray plates, and to an ineffectual short-loop gastro-jejunostomy, performed for their relief.

The other point of interest was the observation that the short-loop gastro-jejunostomy was in reality a long-loop one, because of the long arm of the displaced duodenum, producing a vicious-circle vomiting demanding an operation of the Roux type, which was performed under the most trying conditions, but which was followed by complete and immediate relief.

That you may enter into the problem as it presented itself to me, I will give a brief history of the case.

Miss A. E., age 28 years, native of Finland, with very robust constitution and splendid physique, having always enjoyed good health, was caught between a moving elevator and the shaft; was carried up one floor and then down a floor and a half. The remarkable thing was that she was not immediately crushed to death, but a trap in the roof of the elevator through which her head and shoulders passed, apparently saved her life.

On examining her after the accident I found a very much shocked and nervous patient, conscious, but suffering from the pain of bruises to her right side from the shoulder to the knee, but with no bones broken. She was sent to St. Luke's Hospital for care and observation. Suffice it to say that thorough physical examination revealed no indication of any internal injuries in thorax or abdomen, except superficial tenderness and some spasm of the muscles. No hematuria. Liver, spleen and kidneys were in normal position. Reflexes were normal. The patient complained at this time only of diffuse pains about the region of the right shoulder, right thigh, and at times, in the abdomen. After the first few days the patient complained less of pain, began to move her body, and was very much more comfortable. She was able from the first to take liquid nourishment without distress, but occasionally would complain of nausea, and refuse her food for some one particular meal.

This at the time was not seriously considered, as she had been terribly shocked. It was thought that with rest and returning strength such slight trouble would pass away. However, on the 28th day she began to vomit regularly once a day. It is needless to say that every medicine known to be helpful in relieving vomiting was tried during the succeeding days. The symptoms, however, became gradually more pronounced. She at first would retain and digest one or two of her meals each day, but habitually vomited once, although not always at the same time, each day; nor after taking any particular kind or quantity of food. It was typically erratic in character. Sometimes she would digest a heavy meal and vomit a light one, or vice versa. On the thirty-third day, for the first time, she vomited a large amount of undigested food several hours after eating. Sometimes it would be in the morning, sometimes in the evening, but gradually it became more frequent. Her appetite diminished; she lost weight; was occasionally irrational, and the seriousness of her condition became apparent.

The stomach was washed, test meal given and examined, food withheld entirely without any permanent effect upon the gradual but steady progress of the symptoms pointing to obstruction. An X-ray examination was made when the symptoms began to be constant and severe. It was interpreted as showing decided retention in an apparently low and atonic stomach. Such a condition could easily be explained by the crushing force of the accident and the severity of the shock following. The only fact that did not fit into this theory was that the vomiting did not commence until four weeks after the accident. However, elevation of the foot of the bed, stomatic tonics, and electricity were all tried without avail; so that at last I decided to perform a gastro-jejunostomy for the relief of the symptoms which were now decidedly those of obstruction.

On opening the abdomen what did I find? The stomach was slightly larger than normal, but quite in its normal position. The pyloric sphincter was slightly hypertrophied, but the pyloric opening was patulous. I could find no cause for the vomiting until, in searching for the beginning of the jejunum, I found that instead of disappearing through the mesocolon it seemed to pass down behind the peritoneum toward the pelvis on the left side. Further investigation showed that what passed downward beneath the peritoneum was in reality the duodenum, which at the time of the accident must have been forced, slightly, but sufficiently to loosen the retroperitoneal tissue at the point just back of its place of exit through the mesocolon, and

* Reported before the Surgical Section of the San Francisco County Medical Society, August 17, 1913.

which in the succeeding weeks had been gradually forced further and further along with a constantly increasing knuckle, producing more and more pronounced symptoms of obstruction. With this positive knowledge of actual conditions as seen at operation, a corrected interpretation of the X-ray plate would make the shadow, which was thought to be a low and atonic stomach, in reality a retention in the dilated, herniated third portion of the duodenum. Then for the first time the faint bismuth shadow was observed in the upper portion of the duodenum leading to the mass shadow in the obstructed duodenum.

The duodenum was pulled up and anchored to the under surface of the liver, a short-loop gastro-jejunostomy performed and the abdomen closed.

This ends the first phase of interest in this case; the second is what followed the gastro-jejunostomy.

The patient vomited following the operation. This I hoped, for the first day or two, was due to the anesthetic. As the days passed, however, and the vomiting continued, I knew it was not, but hoped each day that it would stop. Close observation of the character of the vomitus soon led to the conclusion that I was dealing with the so-called "vicious circle." She did not vomit food as before, but bile. Several hours after taking nourishment (this was, of course, four or five days after the operation) she would vomit large quantities of bile with no food whatsoever. I concluded that the third portion of the duodenum, in its low position to which it most likely had returned after the first operation, was acting like the first portion of a jejunum as far as position was concerned, and was thus making a long loop out of my short-loop operation, and that a Roux operation, joining this portion of the duodenum lying below the mesocolon and behind the peritoneum to the efferent portion of the jejunum below the gastro-jejunostomy, was indicated. I shrank from subjecting the patient to such a serious procedure. She was now extremely emaciated from her long continued period of vomiting; part of the time was in delirium, resulting from the loss of nourishment and fluids from her tissues, and had just gone through the shock of one operation. Added to all this, I realized that it would be a very serious undertaking to make a union between the jejunum and the duodenum lying behind the peritoneum. I realized that it would be quite a different undertaking than the ordinary Roux procedure, where one has the afferent loop of the jejunum with its mesentery free. Here there would be no means of bringing the two loops up into the wound for easy union; no way of shutting off the bowel contents to prevent soiling. I realized that, technically, one would be working under a double disadvantage.

I'm sure you will appreciate why I approached this patient's room each day with "fingers double crossed," in the hope that I would find some improvement in her condition that might justify me in postponing any further procedure. Each day, however, brought its disappointment and a weaker patient; so that on the morning of the eighth day, finding my patient still vomiting bile, I decided to wage my theory as to the cause, against her chance of recovery, and sent her to the operating room. As to the operation, it was no easier than I had anticipated. The first stitch that drew the jejunum to the side of the duodenum in the left flank, made every other stitch difficult, because it placed the jejunum between the eye and the field of work. The abdominal aorta, against which the duodenum lay, pulsated most annoyingly. The danger, however, was the risk of infection, as the mucosae had to be united without protective clamps in this deep and trying position. The one relieving feature was, that the previous gastro-jejunostomy had healed without extra adhesions, notwithstanding her constant vomiting. The general cavity was perfectly free as though it had never been opened. With every precaution to combat shock, we finished the union of duodenum and jejunum, and closed the abdomen. With what result? She did not vomit once after the operation, not even from the anesthetic! The convalescence was slow, but continuous and uneventful.

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## BOOK REVIEWS

**Principles and Practice of Obstetrics.** By Joseph B. De Lee, A. M., M. D., Professor of Obstetrics at the Northwestern University Medical School. Large octavo of 1060 pages, with 913 illustrations, 150 of them in colors. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $8.00 net; half morocco, $9.50.

This compend on obstetrics is most completely and beautifully illustrated, rivaling the best that has been published by English or foreign authors. This high plane of excellence is likewise sustained in the sensible and interesting way the author has written his book. For the conscientious undergraduate it must prove rather discouraging to realize that he should master the contents of such a book as this before assuming honestly the responsibilities of private obstetrics practice. For the aspirant of obstetrical honors, however, this book will prove an excellent guide for the early years of his needed training.